

School Air Toxics Survey Report

February 19

2009

In December 2008, USAToday ran a series of articles dealing with potential air toxics emissions that were impacting schools across the nation. To ensure public safety, the DEQ selected the schools from within the 1st percentile for toxics monitoring. Results of the monitoring indicate that the air at or near the schools studied meets all known health and safety standards.

Prepared by: Air Analysis Section
Air Quality Division
Office of Environmental Assessment



School Air Toxics Survey Report

Purpose

In an effort to reassure Louisiana residents that there are no toxic air hot spots near schools, the Louisiana Department of Environmental Quality (LDEQ) conducted a study of air toxics at or near a number of schools throughout the state. These schools were listed in the 1st percentile of all schools (meaning that the air quality around the school was potentially the worst in the nation) as part of a USA Today newspaper series on air toxics. The articles indicated that, based on a screening model known as Risk-Screening Environmental Indicators, or RSEI, these schools were ranked high on potential exposure to air toxics. RSEI cannot say definitively whether anyone is at risk, but instead identifies places where industrial pollution might pose problems.

DEQ's Air Toxics Program

In 1991, the Louisiana Department of Environmental Quality established (LDEQ) regulations and a set of ambient air standards for the toxic air pollutants. The initial list of Louisiana air toxic pollutants (TAPS) consisted of 100 compounds and was selected based on the Toxic Release Inventory data for the state at that time. The Louisiana TAPS initially consisted of 100 compounds, including 13 pollutants that were not on the federal Hazardous Air Pollutant (HAP) list. Louisiana has supplemented the Louisiana TAPS by adopting the federal HAPS in order to be consistent with the federal program. The combined federal and state program regulates major sources of air toxic compounds in Louisiana. Major sources of air toxics emit or have the potential to emit 10 tons per year of any single toxic air pollutant or 25 tons per year of any combination of the listed toxic air pollutants.

Although LDEQ has requested and received delegation for the federal HAP program, Louisiana goes one step beyond the federal rule by establishing ambient air standards for toxic air pollutants. Major sources of toxic air pollutants must not only apply appropriate control technologies but must also demonstrate compliance with the ambient air standards at their facility boundaries prior to receiving an air permit. Louisiana is one of only three states to develop ambient air standards for air toxics. There are two averaging periods specified in these air standards including 8-hour and annual average standards. To ensure compliance with the standards, LDEQ operates between 12 and 16 fixed ambient air monitoring stations around the state for air toxics at any given time. In addition to the fixed sites, any number of special purpose air toxics monitoring efforts are operational throughout the year to address potential air pollutant concerns and ensure that air quality remains in compliance with the state ambient air toxic standards.

Project Background

Schools ranked in the 1st percentile by the USA Today article were surveyed by the LDEQ for ambient air quality with particular emphasis on air toxics. These schools included Wyandotte Early Learning Center and Istrouma High School, located in Baton Rouge; A. L. Smith Elementary, located in Sterlington; Destrehan High School in Destrehan; and S.P. Arnett Middle, Western Heights Elementary, and Vincent Settlement Elementary in Calcasieu Parish. Air toxic data from the Chalmette High monitoring site in St. Bernard Parish, and soil and water samples for nickel in Calcasieu Parish were also reviewed for compliance. In addition to air sampling and data reviews, air quality modeling was performed for A.L. Smith Elementary.

The purpose of the air sampling at the schools was to make a scientifically sound determination, using scientifically accepted sampling and analysis methodology, whether or not the ambient concentration of air toxics was in compliance with the state ambient air quality standards at these schools. Air samples were collected in canisters in the areas surrounding Wyandotte Early Learning Center, Istrouma High School, A.L. Smith Elementary, Destrehan High School, S.P. Arnett Middle, Western Heights Elementary, and Vincent Settlement Elementary. The canisters were then analyzed by the LDEQ Laboratory. Each sample was analyzed for a total of 106 different compounds.

A permanent DEQ air monitoring site is located at Chalmette High which is an area mentioned in the US Today article. Canisters are automatically taken every 6 days during ozone season. Air toxics data from the monitoring site at Chalmette High was reviewed and data from three days, July 29th, August 4th, and August 10th, were used in this study. Additionally, the LDEQ Mobile Air Monitoring Laboratory (MAML) was deployed to Istrouma High School to monitor for sulfur dioxide (SO₂), hydrogen sulfide (H₂S), sulfuric acid (H₂SO₄), non-methane organic compounds (NMOC), and 26 compounds analyzed by GC/PID/ELCD. Meteorological data was also collected during the sampling period. All the canister samples had concentrations well below the established Louisiana Ambient Air Standards (LAAS) with many compounds not being detected at all. Selected compounds with the highest levels are listed in Tables 1 & 2 below.

Table 1: Canister Sample Results – Baton Rouge, Sterlington, Chalmette and Destrehan, LA

	Wyandotte ELC		Istrouma High		A. L. Smith Elementary		Chalmette High		Destrehan High	
Compound	Conc. ppbv	% Standard	Conc. ppbv	% Standard	Conc. ppbv	% Standard	Conc. ppbv	% Standard	Conc. ppbv	% Standard
Benzene	0.27	7.32	0.27	7.19	0.13	3.53	1.72	46.65	0.23	6.24
1,3-Butadiene	0.06	13.47	0.08	18.37	0.03	7.35	0.13	31.85	0.03	7.35
1,1,1-Trichloethane	0.02	6.54	0.02	6.54	0.02	6.54	0.01	3.27	0.02	6.54
Carbon Tetrachloride	0.10	9.61	0.08	7.69	0.09	8.65	0.09	8.65	0.09	8.65

- Lab reports included in Appendix A

Table 2 : Canister Sample Results - Lake Charles and Surrounding Areas, LA

	SP Arnett Middle		Western Heights Elementary		Vincent Settlement Elementary	
Compound	Conc. ppbv	% Standard	Conc. ppbv	% Standard	Conc. ppbv	% Standard
Benzene	0.47	12.75	0.60	16.27	0.21	5.70
1,3-Butadiene	0.24	58.79	0.03	7.35	Not detected	Not detected
1,1,1-Trichloroethane	0.23	75.20	0.04	13.08	0.03	9.81
Carbon Tetrachloride	0.27	25.94	0.11	10.57	0.11	10.57

- Lab reports included in Appendix B

The MAML was deployed to Istrouma High School on January 7, from 0800 to 1600 CST. Weather for monitoring was excellent; a bright sunny day with somewhat steady prevailing winds, mostly 2-5 mph, and largely out of the northwest. The MAML was situated in the school parking lot bounded by two busy thoroughfares and this site as a whole was, at the time, downwind from several major industrial petrochemical manufacturers and transportation facilities in the Baton Rouge area. No odors were detected by LDEQ personnel. Results from the gas chromatograph show that all concentrations for the 26 compounds analyzed for were well below the LAAS with many compounds not being detected and similar to LDEQ stationary monitoring stations located in the area. Sulfur dioxide was shown to be 98.06% below the National Ambient Air Quality Standards for the sampling period.

Hydrogen sulfide was determined to be 95.6% below LAAS. These concentrations of hydrogen sulfide were also below the no observable adverse effects level (NOAEL) of 2,000ppb, the concentration at which no health effects were observed following human exposure. Of note would be a slightly elevated benzene concentration, 5.85ppbv, in only one of the VOC samples analyzed. Benzene, trimethyl benzenes, toluene and a few of the other VOC's are by-products of fuel combustion and are regularly detected in the low ppb range in populated areas. The two sulfuric acid samples were taken using a Gastec sampling pump and detector tubes specific for sulfuric acid. Sulfuric acid was not detected and the concentration for sulfuric acid (if present) was below 0.2 mg/m³. A summary of the results are listed below.

Table 3: Sample Results from MAML at Istrouma High School- Baton Rouge, LA

Compound	Minimum ppbv	Maximum ppbv	Average ppbv	% STND
Benzene	0.62	5.85	1.93	52.34
Toluene	1.04	1.66	1.34	0.06
Chloroform	0.00	0.10	0.02	2.31
Carbon Tetrachloride	0.00	0.08	0.05	4.80
Sulfur Dioxide	0.11	8.08	2.71	1.94
Hydrogen Sulfide	8.22	13.73	10.22	4.40
TNMOC	0.31 ppmC	1.61 ppmC	0.76 ppmC	N/A

- Lab reports included in Appendix C

Because 2-Nitropropane was a compound of interest for A. L. Smith Elementary School, the four canister samples that were collected in association with this school located in

Sterlington, were analyzed for this compound. The compound was not detected at the school, outside the LDEQ Northeast Regional office, nor upwind of Angus Chemical which is located at 350 Highway 2. A low concentration (0.33 ppbv) was found downwind of Angus Chemical and was well (93.9%) below the LAAS.

Additionally, LDEQ performed air quality modeling for the A.L. Smith Elementary School area. The 2-nitropropane emissions from Angus Chemical were modeled to predict whether emissions are in compliance with the LAAS. Angus currently has three air permits, each of which contains permitted emissions of 2-nitropropane. The facility performed in-house modeling in 2004; at that time, the facility determined that the 2-nitropropane emissions were in compliance with the LAAS, but this modeling was not submitted to the Department. A simple screening model was run by the Department in 2007 in conjunction with a modification of one of the air permits. This screening model indicated compliance with the LAAS.

In response to concerns raised in the USA Today article about the 2-nitropropane emissions from Angus, the Department gathered data used by Angus in its 2004 modeling. This data was verified for accuracy and updated to reflect current permit limits. The Department used Industrial Source Complex Short Term 3 (ISCST3) to model the facility's emissions. 2004 meteorological data from Shreveport that was previously processed by the Department was used in the model; this same meteorological data is used in other Department screening models. A receptor grid of 3.6 kilometers by 3.5 kilometers, with receptors placed every 100 meters was used to determine impact to the surrounding area. An additional 50 receptors were placed around the fenceline of the facility's property. The receptors inside of the facility's property line were removed. The results of this modeling indicated that the highest predicted concentration at an off-site receptor is $13.8\mu\text{g}/\text{m}^3$. This receptor is approximately one meter north of the facility. This concentration is 69% of the LAAS which is set at $20\mu\text{g}/\text{m}^3$. The predicted concentration of the receptors located in the vicinity of A. L. Smith Elementary School is less than $1\mu\text{g}/\text{m}^3$.

A review of soil and groundwater samples was conducted to determine if a high level of nickel existed in Calcasieu Parish. This was done to evaluate possible increased air exposure to nickel around the Vincent Settlement Elementary School. The highest level of nickel detected in a groundwater sample in the past five years was $4.57\mu\text{g}/\text{L}$. For comparison, the absolute minimum criterion (chronic criterion calculated using 25 mg/L hardness), is $48.65\mu\text{g}/\text{L}$. The lowest RECAP level for screening of 160 mg/kg was used to compare to soil sample levels. Soil samples in the area taken in 2003 ranged from 1.4 to 16.6 mg/kg which is well below the screening level for remediation action.

Conclusions

Based on the analyses performed, the air at the schools studied meets all known health and safety standards. Although the RSEI model ranks the potential for harmful exposure to air toxics at some Louisiana schools to be high, actual exposure to air toxics at the schools in this study has been shown to be low and well within healthy limits by the use of scientifically accepted sampling and analysis methods. The Department also has a network of 21 monitors throughout the state that are capable of providing monitoring data on air toxics. As with this study, these monitors show the state to be in compliance with the state air toxics regulations.

The LDEQ has been in discussions with the Department of Health and Hospitals (DHH) and will be providing monitoring data that will be used to perform a health consultation.

Appendix A

A-1 Wyandotte Early Learning Center

A-2 Istrouma High

A-3 A.L. Smith Elementary

A-4 Chalmette High

A-5 Destrehan High

Appendix A-1

Wyandotte Early Learning Center

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL27911 AI27912
 Field Sample ID: Grab 0076
 Sample Date: 12/18/2008
 Sample Time: 10:30 CST
 Analysis Method: GC/FID

Sample Location: Wyandotte Pre-K Center
 2525 Wyandotte St.
 Baton Rouge, LA
 Sample Collector: David Wagenecht
 Analyzed By: Mehdi Aarabi

Compound	ppbv	ug/m ³	% STND
Acetylene	0.95	1.03	
Ethylene	2.04	2.38	
Ethane	7.80	9.77	
Propylene	0.81	1.42	
Propane	4.29	7.87	
Isobutane	1.44	3.49	
1-Butene	0.12	0.27	
n-Butane	3.38	8.19	
t-2-Butene	0.06	0.14	
c-2-Butene	0.05	0.12	
2-methylbutane	1.47	4.42	
1-Pentene	0.75	2.18	
n-Pentane	0.45	1.34	
Isoprene	0.05	0.13	
t-2-pentene	0.07	0.20	
c-2-pentene	0.04	0.12	
2,2-Dimethylbutane	0.05	0.16	
Cyclopentane	0.07	0.19	
2,3-dimethylbutane	0.11	0.38	
2-methylpentane	0.39	1.38	
3-Methylpentane	0.25	0.88	
1-hexene	0.03	0.11	
n-hexane	0.35	1.24	
Methylcyclopentane	0.18	0.61	
2,4-dimethylpentane	0.05	0.19	
Benzene	0.27	0.88	7.32
Cyclohexane	0.09	0.30	
2-methylhexane	0.11	0.46	
2,3-dimethylpentane	0.07	0.27	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	0.13	0.54	
2,2,4-trimethylpentane	0.26	1.21	
n-Heptane	0.11	0.44	
Methylcyclohexane	0.10	0.39	
2,3,4-trimethylpentane	0.08	0.38	
Toluene	0.69	2.63	0.03
2-methylheptane	0.05	0.21	
3-methylheptane	0.03	0.14	
n-Octane	0.07	0.31	
Ethylbenzene	0.09	0.40	0.00
m/p-Xylene	0.32	1.39	0.01
Styrene	0.06	0.26	0.01
o-Xylene	0.10	0.44	0.00
n-Nonane	0.04	0.19	
Cumene	nd	nd	
n-Propylbenzene	nd	nd	
m-Ethyltoluene	0.09	0.43	
p-Ethyltoluene	0.04	0.18	
1,3,5-Trimethylbenzene	0.04	0.18	
o-Ethyltoluene	0.03	0.15	
1,2,4-trimethylbenzene	0.10	0.50	
n-Decane	0.04	0.21	
1,2,3-trimethylbenzene	0.03	0.13	
m-Diethylbenzene	0.01	0.06	
p-Diethylbenzene	0.02	0.11	
n-Undecane	0.03	0.20	
1,3-butadiene	0.04	0.08	8.57
Uncalibrated (as propane)	7.10	13.05	
Total NMOC	41.16	75.63	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL27911 AL27912
 Field Sample ID: Grab 0076
 Sample Date: 12/18/2008
 Sample Time: 10:30 CST
 Analysis Method: GC/MS

Sample Location: Wyandotte Pre-K Center
 2525 Wyandotte St.
 Baton Rouge, LA
 Sample Collector: David Wagenecht
 Analyzed By: HFL

Compound	ppbv	ug/m ³	% STND
Freon-12	0.56	2.80	
Chloromethane	0.69	1.45	2.61
Freon-114	0.02	0.14	
Vinyl Chloride	nd	nd	
1,3-Butadiene	0.06	0.12	13.47
Bromomethane	0.01	0.04	
Carbon Disulfide	0.01	0.03	0.04
Chloroethane	nd	nd	
Freon-11	0.26	1.49	
Acetonitrile	0.11	0.19	0.02
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.12	0.42	
Freon-113	0.09	0.70	
Acetone	1.58	3.81	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	nd	nd	
Chloroform	0.03	0.12	2.89
1,2-Dichloroethane	0.03	0.12	3.21
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.02	0.11	6.54
Benzene	0.24	0.78	6.51
Carbon Tetrachloride	0.10	0.64	9.61
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	nd	nd	
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	nd	nd	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.61	2.32	0.03
2-Butanone	0.30	0.89	
1,2-Dibromoethane	nd	nd	
Tetrachloroethylene	0.04	0.28	0.27
Methyl Acrylate	nd	nd	
Chlorobenzene	0.01	0.05	0.00
Ethylbenzene	0.07	0.31	0.00
m/p-Xylene	0.26	1.13	0.01
Styrene	0.04	0.15	0.00
o-Xylene	0.08	0.33	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	
1,3,5-Trimethylbenzene	0.02	0.10	
1,2,4-Trimethylbenzene	0.08	0.40	
Chlorobutane	nd	nd	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	nd	nd	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	0.03	0.15	0.01
1,3-Dichlorobenzene	nd	nd	
1,2-Dichlorobenzene	nd	nd	
1,2,4-Trichlorobenzene	nd	nd	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	nd	nd	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

Appendix A-2

Istrouma High

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL27913 AI27914
 Field Sample ID: Grab 0077
 Sample Date: 12/18/2008
 Sample Time: 10:05
 Analysis Method: GC/FID

Sample Location: Istrouma High School
 3730 Winbourne Ave.
 Baton Rouge, LA
 Sample Collector: David Wagenecht
 Analyzed By: Jerry Knight

Compound	ppbv	ug/m ³	% STND
Acetylene	0.67	0.72	
Ethylene	1.31	1.53	
Ethane	6.76	8.47	
Propylene	0.73	1.27	
Propane	3.79	6.95	
Isobutane	1.31	3.17	
1-Butene	0.17	0.40	
n-Butane	4.30	10.41	
t-2-Butene	0.08	0.18	
c-2-Butene	0.07	0.16	
2-methylbutane	1.66	4.98	
1-Pentene	0.25	0.72	
n-Pentane	0.97	2.92	
Isoprene	0.10	0.28	
t-2-pentene	0.12	0.35	
c-2-pentene	0.05	0.13	
2,2-Dimethylbutane	0.05	0.18	
Cyclopentane	0.07	0.20	
2,3-dimethylbutane	0.10	0.34	
2-methylpentane	0.34	1.22	
3-Methylpentane	0.23	0.81	
1-hexene	nd	nd	
n-hexane	0.32	1.15	
Methylcyclopentane	0.16	0.54	
2,4-dimethylpentane	0.04	0.17	
Benzene	0.27	0.86	7.19
Cyclohexane	0.07	0.25	
2-methylhexane	0.10	0.42	
2,3-dimethylpentane	0.05	0.21	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	0.11	0.46	
2,2,4-trimethylpentane	0.19	0.88	
n-Heptane	0.10	0.40	
Methylcyclohexane	0.09	0.35	
2,3,4-trimethylpentane	0.06	0.29	
Toluene	0.53	2.03	0.02
2-methylheptane	0.02	0.10	
3-methylheptane	0.03	0.14	
n-Octane	0.09	0.43	
Ethylbenzene	0.07	0.31	0.00
m/p-Xylene	0.25	1.11	0.01
Styrene	0.02	0.09	0.00
o-Xylene	0.10	0.44	0.00
n-Nonane	0.03	0.16	
Cumene	nd	nd	
n-Propylbenzene	nd	nd	
m-Ethyltoluene	0.06	0.28	
p-Ethyltoluene	0.03	0.15	
1,3,5-Trimethylbenzene	0.05	0.25	
o-Ethyltoluene	0.03	0.13	
1,2,4-trimethylbenzene	0.07	0.33	
n-Decane	0.03	0.18	
1,2,3-trimethylbenzene	nd	nd	
m-Diethylbenzene	0.04	0.22	
p-Diethylbenzene	nd	nd	
n-Undecane	0.02	0.13	
1,3-butadiene	0.08	0.17	18.37
Uncalibrated (as propane)	5.08	9.33	
Total NMOC	37.34	68.61	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL27913 AL27914
 Field Sample ID: Grab 0076
 Sample Date: 12/18/2008
 Sample Time: 10:05
 Analysis Method: GC/MS

Sample Location: Istrouma High School
 3730 Winbourne Ave.
 Baton Rouge, LA
 Sample Collector: David Wagenecht
 Analyzed By: HFL

Compound	ppbv	ug/m ³	% STND
Freon-12	0.52	2.62	
Chloromethane	0.65	1.36	2.44
Freon-114	0.02	0.14	
Vinyl Chloride	nd	nd	
1,3-Butadiene	0.03	0.06	6.12
Bromomethane	0.02	0.08	
Carbon Disulfide	0.01	0.03	0.04
Chloroethane	nd	nd	
Freon-11	0.26	1.49	
Acetonitrile	0.14	0.23	0.03
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.13	0.44	
Freon-113	0.08	0.62	
Acetone	1.62	3.92	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	0.03	0.07	4.51
Chloroform	0.02	0.10	2.31
1,2-Dichloroethane	0.02	0.08	2.14
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.02	0.11	6.54
Benzene	0.17	0.55	4.61
Carbon Tetrachloride	0.08	0.51	7.69
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	0.03	0.14	0.23
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	0.38	1.13	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.31	1.17	0.01
2-Butanone	0.22	0.66	
1,2-Dibromoethane	nd	nd	
Tetrachloroethylene	0.03	0.21	0.20
Methyl Acrylate	nd	nd	
Chlorobenzene	nd	nd	
Ethylbenzene	0.05	0.20	0.00
m/p-Xylene	0.15	0.66	0.01
Styrene	0.02	0.07	0.00
o-Xylene	0.06	0.24	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	
1,3,5-Trimethylbenzene	0.01	0.05	
1,2,4-Trimethylbenzene	0.05	0.23	
Chlorobutane	nd	nd	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	nd	nd	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	0.02	0.09	0.01
1,3-Dichlorobenzene	nd	nd	
1,2-Dichlorobenzene	nd	nd	
1,2,4-Trichlorobenzene	nd	nd	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	nd	nd	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

Appendix A-3

A.L. Smith Elementary

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL28478
 Field Sample ID: G1131
 Sample Date: 12/29/2008
 Sample Time: 10:38
 Analysis Method: GC/FID

Sample Location: A. L. Smith Elementary
 Parking Lot
 206 High Street
 Sterlington, LA 71280
 Sample Collector: Tommy Perryman
 Analyzed By: Jerry Knight

Compound	ppbv	ug/m ³	% STND
Acetylene	0.49	0.53	
Ethylene	0.32	0.37	
Ethane	5.63	7.05	
Propylene	0.06	0.11	
Propane	2.03	3.73	
Isobutane	0.30	0.73	
1-Butene	0.03	0.07	
n-Butane	0.60	1.45	
t-2-Butene	nd	nd	
c-2-Butene	nd	nd	
2-methylbutane	0.28	0.84	
1-Pentene	0.03	0.09	
n-Pentane	0.17	0.51	
Isoprene	nd	nd	
t-2-pentene	0.04	0.12	
c-2-pentene	nd	nd	
2,2-Dimethylbutane	0.03	0.11	
Cyclopentane	0.02	0.06	
2,3-dimethylbutane	0.02	0.07	
2-methylpentane	0.06	0.22	
3-Methylpentane	0.04	0.14	
1-hexene	0.01	0.04	
n-hexane	0.08	0.29	
Methylcyclopentane	0.03	0.11	
2,4-dimethylpentane	0.01	0.04	
Benzene	0.11	0.36	2.98
Cyclohexane	0.02	0.07	
2-methylhexane	0.01	0.04	
2,3-dimethylpentane	0.01	0.04	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	0.02	0.08	
2,2,4-trimethylpentane	0.03	0.14	
n-Heptane	0.02	0.08	
Methylcyclohexane	0.02	0.08	
2,3,4-trimethylpentane	0.02	0.10	
Toluene	0.06	0.23	0.00
2-methylheptane	0.01	0.05	
3-methylheptane	0.01	0.05	
n-Octane	0.02	0.10	
Ethylbenzene	0.02	0.09	0.00
m/p-Xylene	0.02	0.09	0.00
Styrene	0.02	0.09	0.00
o-Xylene	0.02	0.09	0.00
n-Nonane	0.01	0.05	
Cumene	nd	nd	
n-Propylbenzene	nd	nd	
m-Ethyltoluene	nd	nd	
p-Ethyltoluene	nd	nd	
1,3,5-Trimethylbenzene	nd	nd	
o-Ethyltoluene	nd	nd	
1,2,4-trimethylbenzene	nd	nd	
n-Decane	0.01	0.06	
1,2,3-trimethylbenzene	0.03	0.15	
m-Diethylbenzene	nd	nd	
p-Diethylbenzene	nd	nd	
n-Undecane	0.02	0.13	
1,3-butadiene	0.03	0.07	7.35
Uncalibrated (as propane)	31.18	57.29	
Total NMOC	42.00	77.18	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL28478
 Field Sample ID: G1131
 Sample Date: 12/29/2008
 Sample Time: 10:38
 Analysis Method: GC/MS

Sample Location: A. L. Smith Elementary
 Parking Lot
 206 High Street
 Sterlington, LA 71280
 Sample Collector: Tommy Perryman
 Analyzed By: HFL

Compound	ppbv	ug/m ³	% STND
Freon-12	0.54	2.72	
Chloromethane	0.53	1.11	2.01
Freon-114	0.02	0.14	
Vinyl Chloride	nd	nd	
1,3-Butadiene	nd	nd	
Bromomethane	0.02	0.08	
Carbon Disulfide	0.01	0.03	0.04
Chloroethane	nd	nd	
Freon-11	0.25	1.43	
Acetonitrile	0.06	0.10	0.01
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.08	0.28	
Freon-113	0.09	0.70	
Acetone	2.31	5.59	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	nd	nd	
Chloroform	0.03	0.15	3.47
1,2-Dichloroethane	0.02	0.08	2.14
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.02	0.11	6.54
Benzene	0.13	0.42	3.53
Carbon Tetrachloride	0.09	0.58	8.65
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	nd	nd	
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	nd	nd	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.06	0.23	0.00
2-Butanone	0.31	0.93	
1,2-Dibromoethane	nd	nd	
Tetrachloroethylene	nd	nd	
Methyl Acrylate	nd	nd	
Chlorobenzene	nd	nd	
Ethylbenzene	0.01	0.04	0.00
m/p-Xylene	0.02	0.09	0.00
Styrene	nd	nd	
o-Xylene	0.01	0.04	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	
1,3,5-Trimethylbenzene	0.01	0.05	
1,2,4-Trimethylbenzene	0.01	0.05	
Chlorobutane	nd	nd	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	nd	nd	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	nd	nd	
1,3-Dichlorobenzene	0.01	0.06	
1,2-Dichlorobenzene	nd	nd	
1,2,4-Trichlorobenzene	nd	nd	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	0.04	0.17	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

Appendix A-4

Chalmette High

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL20054
 Field Sample ID:
 Sample Date: 7/29/2008
 Sample Time: 24 hr sample
 Analysis Method: GC/FID

Sample Location: Chalmette High School

Sample Collector: Automatic
 Analyzed By:

Compound	ppbv	ug/m ³	% STND
Acetylene	1.16	1.26	
Ethylene	3.81	4.45	
Ethane	12.04	15.09	
Propylene	2.94	5.15	
Propane	14.38	26.42	
Isobutane	8.39	20.32	
1-Butene	0.77	1.80	
n-Butane	23.34	56.52	
t-2-Butene	0.76	1.78	
c-2-Butene	0.67	1.57	
2-methylbutane	nd	nd	
1-Pentene	0.73	2.13	
n-Pentane	11.46	34.45	
Isoprene	2.80	7.95	
t-2-pentene	1.96	5.73	
c-2-pentene	0.84	2.45	
2,2-Dimethylbutane	0.68	2.44	
Cyclopentane	0.84	2.45	
2,3-dimethylbutane	1.06	3.81	
2-methylpentane	4.41	15.84	
3-Methylpentane	2.69	9.66	
1-hexene	0.25	0.88	
n-hexane	3.24	11.63	
Methylcyclopentane	1.71	6.00	
2,4-dimethylpentane	0.36	1.50	
Benzene	1.72	5.60	46.65
Cyclohexane	0.66	2.31	
2-methylhexane	0.97	4.05	
2,3-dimethylpentane	0.49	2.05	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	1.19	4.97	
2,2,4-trimethylpentane	1.82	8.66	
n-Heptane	1.12	4.68	
Methylcyclohexane	1.71	7.00	
2,3,4-trimethylpentane	0.40	1.90	
Toluene	3.17	12.17	0.14
2-methylheptane	0.44	2.09	
3-methylheptane	0.38	1.81	
n-Octane	0.73	3.47	
Ethylbenzene	0.61	2.70	0.03
m/p-Xylene	2.13	9.42	0.09
Styrene	0.23	1.00	0.02
o-Xylene	0.74	3.27	0.03
n-Nonane	0.43	2.30	
Cumene	0.10	0.50	0.01
n-Propylbenzene	0.17	0.85	
m-Ethyltoluene	0.53	2.65	
p-Ethyltoluene	0.33	1.65	
1,3,5-Trimethylbenzene	0.24	1.20	
o-Ethyltoluene	0.48	2.40	
1,2,4-trimethylbenzene	0.84	4.21	
n-Decane	0.45	2.67	
1,2,3-trimethylbenzene	0.32	1.60	
m-Diethylbenzene	0.12	0.67	
p-Diethylbenzene	0.08	0.45	
n-Undecane	0.38	2.47	
1,3-butadiene	0.13	0.29	31.85
Uncalibrated (as propane)	87.60	160.97	
Total NMOC	212.00	389.55	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL20054
 Field Sample ID:
 Sample Date: 7/29/2008
 Sample Time: 24 hr sample
 Analysis Method: GC/MS

Sample Location: Chalmette High School

Sample Collector: Automatic
 Analyzed By:

Compound	ppbv	ug/m ³	% STND
Freon-12	0.54	2.72	
Chloromethane	0.78	1.64	2.95
Freon-114	0.02	0.14	
Vinyl Chloride	nd	nd	
1,3-Butadiene	nd	nd	
Bromomethane	nd	nd	
Carbon Disulfide	0.06	0.19	0.27
Chloroethane	nd	nd	
Freon-11	0.25	1.43	
Acetonitrile	0.41	0.70	0.09
1,1-Dichloroethene	0.02	0.08	
Methylene Chloride	0.09	0.32	
Freon-113	0.08	0.62	
Acetone	0.76	1.84	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	0.99	2.19	148.89 *
Chloroform	0.04	0.20	4.63
1,2-Dichloroethane	0.05	0.21	5.35
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.01	0.06	3.27
Benzene	0.25	0.81	6.78
Carbon Tetrachloride	0.09	0.58	8.65
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	nd	nd	
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	nd	nd	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.27	1.04	0.01
2-Butanone	0.37	1.11	
1,2-Dibromoethane	nd	nd	
Tetrachloroethylene	0.03	0.21	0.20
Methyl Acrylate	nd	nd	
Chlorobenzene	0.01	0.05	0.00
Ethylbenzene	0.04	0.18	0.00
m/p-Xylene	0.13	0.58	0.01
Styrene	0.01	0.04	0.00
o-Xylene	0.04	0.18	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	
1,3,5-Trimethylbenzene	0.01	0.05	
1,2,4-Trimethylbenzene	0.04	0.20	
Chlorobutane	nd	nd	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	nd	nd	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	0.01	0.06	0.00
1,3-Dichlorobenzene	0.01	0.06	
1,2-Dichlorobenzene	nd	nd	
1,2,4-Trichlorobenzene	0.02	0.15	
1,3-Hexachlorobutadiene	0.01	0.11	2.39
2-Hexanone	0.03	0.13	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

* Standard is based on annual average. Average value for 2008 was 0.45 which is 67.8% of the standard.

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL20055
 Field Sample ID:
 Sample Date: 8/4/2008
 Sample Time: 24 hr sample
 Analysis Method: GC/FID

Sample Location: Chalmette High School

Sample Collector: Automatic
 Analyzed By:

Compound	ppbv	ug/m ³	% STND
Acetylene	0.39	0.42	
Ethylene	1.65	1.93	
Ethane	4.89	6.13	
Propylene	1.12	1.96	
Propane	10.97	20.16	
Isobutane	20.30	49.16	
1-Butene	0.33	0.77	
n-Butane	26.01	62.99	
t-2-Butene	0.30	0.70	
c-2-Butene	0.36	0.84	
2-methylbutane	nd	nd	
1-Pentene	0.72	2.10	
n-Pentane	4.88	14.67	
Isoprene	1.52	4.31	
t-2-pentene	0.64	1.87	
c-2-pentene	0.31	0.91	
2,2-Dimethylbutane	0.31	1.11	
Cyclopentane	0.38	1.11	
2,3-dimethylbutane	0.93	3.34	
2-methylpentane	2.61	9.37	
3-Methylpentane	1.73	6.21	
1-hexene	0.10	0.35	
n-hexane	2.60	9.34	
Methylcyclopentane	1.40	4.91	
2,4-dimethylpentane	0.79	3.30	
Benzene	1.33	4.33	36.07
Cyclohexane	1.04	3.65	
2-methylhexane	1.21	5.05	
2,3-dimethylpentane	1.06	4.43	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	1.43	5.97	
2,2,4-trimethylpentane	7.89	37.55	
n-Heptane	1.73	7.22	
Methylcyclohexane	1.62	6.63	
2,3,4-trimethylpentane	2.14	10.19	
Toluene	4.36	16.74	0.19
2-methylheptane	0.66	3.14	
3-methylheptane	0.58	2.76	
n-Octane	1.16	5.52	
Ethylbenzene	0.56	2.48	0.02
m/p-Xylene	1.66	7.34	0.07
Styrene	0.16	0.69	0.01
o-Xylene	0.60	2.65	0.03
n-Nonane	0.45	2.40	
Cumene	0.10	0.50	0.01
n-Propylbenzene	0.20	1.00	
m-Ethyltoluene	0.43	2.15	
p-Ethyltoluene	0.23	1.15	
1,3,5-Trimethylbenzene	0.27	1.35	
o-Ethyltoluene	0.37	1.85	
1,2,4-trimethylbenzene	0.70	3.51	
n-Decane	0.28	1.66	
1,2,3-trimethylbenzene	0.17	0.85	
m-Diethylbenzene	0.09	0.50	
p-Diethylbenzene	0.15	0.84	
n-Undecane	0.26	1.69	
1,3-butadiene	0.13	0.29	31.85
Uncalibrated (as propane)	60.74	111.61	
Total NMOC	179.00	328.91	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL20055
 Field Sample ID:
 Sample Date: 8/4/2008
 Sample Time: 24 hr sample
 Analysis Method: GC/MS

Sample Location: Chalmette High School

Sample Collector: Automatic
 Analyzed By:

Compound	ppbv	ug/m ³	% STND
Freon-12	0.56	2.82	
Chloromethane	0.68	1.43	2.57
Freon-114	0.02	0.14	
Vinyl Chloride	nd	nd	
1,3-Butadiene	nd	nd	
Bromomethane	nd	nd	
Carbon Disulfide	0.18	0.57	0.80
Chloroethane	nd	nd	
Freon-11	0.26	1.49	
Acetonitrile	0.50	0.86	0.11
1,1-Dichloroethene	0.02	0.08	
Methylene Chloride	0.08	0.28	
Freon-113	0.08	0.62	
Acetone	0.61	1.48	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	0.70	1.55	105.28 *
Chloroform	0.01	0.05	1.16
1,2-Dichloroethane	0.02	0.08	2.14
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.01	0.06	3.27
Benzene	0.17	0.55	4.61
Carbon Tetrachloride	0.01	0.06	0.96
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	nd	nd	
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	nd	nd	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.33	1.27	0.01
2-Butanone	0.12	0.36	
1,2-Dibromoethane	nd	nd	
Tetrachloroethylene	nd	nd	
Methyl Acrylate	nd	nd	
Chlorobenzene	0.01	0.05	0.00
Ethylbenzene	0.04	0.18	0.00
m/p-Xylene	0.10	0.44	0.00
Styrene	nd	nd	
o-Xylene	0.04	0.18	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	
1,3,5-Trimethylbenzene	0.01	0.05	
1,2,4-Trimethylbenzene	0.04	0.20	
Chlorobutane	nd	nd	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	nd	nd	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	nd	nd	
1,3-Dichlorobenzene	nd	nd	
1,2-Dichlorobenzene	nd	nd	
1,2,4-Trichlorobenzene	nd	nd	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	nd	nd	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

* Standard is based on annual average. Average value for 2008 was 0.45 which is 67.8% of the standard.

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL20057
 Field Sample ID:
 Sample Date: 8/10/2008
 Sample Time: 24 hr sample
 Analysis Method: GC/FID

Sample Location: Chalmette High School

Sample Collector: Automatic
 Analyzed By:

Compound	ppbv	ug/m ³	% STND
Acetylene	0.53	0.58	
Ethylene	3.23	3.78	
Ethane	15.36	19.24	
Propylene	2.08	3.65	
Propane	16.58	30.47	
Isobutane	7.10	17.19	
1-Butene	0.40	0.94	
n-Butane	20.13	48.75	
t-2-Butene	0.44	1.03	
c-2-Butene	0.33	0.77	
2-methylbutane	nd	nd	
1-Pentene	0.56	1.64	
n-Pentane	10.30	30.96	
Isoprene	2.23	6.33	
t-2-pentene	1.33	3.89	
c-2-pentene	0.63	1.84	
2,2-Dimethylbutane	0.61	2.19	
Cyclopentane	0.68	1.99	
2,3-dimethylbutane	0.91	3.27	
2-methylpentane	3.79	13.61	
3-Methylpentane	2.16	7.76	
1-hexene	0.10	0.35	
n-hexane	2.96	10.63	
Methylcyclopentane	1.37	4.80	
2,4-dimethylpentane	0.32	1.34	
Benzene	1.49	4.85	40.41
Cyclohexane	2.49	8.73	
2-methylhexane	0.79	3.30	
2,3-dimethylpentane	0.42	1.75	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	0.94	3.92	
2,2,4-trimethylpentane	1.88	8.95	
n-Heptane	1.02	4.26	
Methylcyclohexane	0.70	2.86	
2,3,4-trimethylpentane	0.37	1.76	
Toluene	2.67	10.25	0.12
2-methylheptane	0.25	1.19	
3-methylheptane	0.30	1.43	
n-Octane	0.70	3.33	
Ethylbenzene	0.65	2.88	0.03
m/p-Xylene	2.82	12.47	0.12
Styrene	0.12	0.52	0.01
o-Xylene	0.73	3.23	0.03
n-Nonane	0.56	2.99	
Cumene	0.12	0.60	0.01
n-Propylbenzene	0.15	0.75	
m-Ethyltoluene	0.43	2.15	
p-Ethyltoluene	0.30	1.50	
1,3,5-Trimethylbenzene	0.25	1.25	
o-Ethyltoluene	0.46	2.30	
1,2,4-trimethylbenzene	0.71	3.56	
n-Decane	0.55	3.26	
1,2,3-trimethylbenzene	0.17	0.85	
m-Diethylbenzene	0.10	0.56	
p-Diethylbenzene	0.13	0.73	
n-Undecane	0.44	2.87	
1,3-butadiene	0.11	0.25	26.95
Uncalibrated (as propane)	73.05	134.23	
Total NMOC	190.00	349.13	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AL20057
 Field Sample ID:
 Sample Date: 8/10/2008
 Sample Time: 24 hr sample
 Analysis Method: GC/MS

Sample Location: Chalmette High School

Sample Collector: Automatic
 Analyzed By:

Compound	ppbv	ug/m ³	% STND
Freon-12	0.60	3.02	
Chloromethane	0.80	1.68	3.03
Freon-114	0.02	0.14	
Vinyl Chloride	nd	nd	
1,3-Butadiene	nd	nd	
Bromomethane	nd	nd	
Carbon Disulfide	0.07	0.22	0.31
Chloroethane	nd	nd	
Freon-11	0.28	1.60	
Acetonitrile	0.44	0.75	0.09
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.08	0.28	
Freon-113	0.09	0.70	
Acetone	0.74	1.79	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	0.92	2.03	138.37 *
Chloroform	0.05	0.25	5.78
1,2-Dichloroethane	0.02	0.08	2.14
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.01	0.06	3.27
Benzene	0.22	0.72	5.97
Carbon Tetrachloride	0.01	0.06	0.96
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	nd	nd	
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	nd	nd	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.22	0.84	0.01
2-Butanone	0.33	0.99	
1,2-Dibromoethane	nd	nd	
Tetrachloroethylene	nd	nd	
Methyl Acrylate	nd	nd	
Chlorobenzene	0.01	0.05	0.00
Ethylbenzene	0.04	0.18	0.00
m/p-Xylene	0.16	0.71	0.01
Styrene	nd	nd	
o-Xylene	0.04	0.18	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	
1,3,5-Trimethylbenzene	0.01	0.05	
1,2,4-Trimethylbenzene	0.04	0.20	
Chlorobutane	nd	nd	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	nd	nd	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	nd	nd	
1,3-Dichlorobenzene	nd	nd	
1,2-Dichlorobenzene	nd	nd	
1,2,4-Trichlorobenzene	nd	nd	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	0.02	0.08	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

* Standard is based on annual average. Average value for 2008 was 0.45 which is 67.8% of the standard.

Appendix A-5

Destrehan High

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AM02671
 Canister ID S1490
 Sample Date: 2/10/2009
 Sample Time: 7:52 CST
 Analysis Method: GC/FID

Sample Location: Destrahan High School
 1 Wildcat Lane
 Destrahan, LA 70047
 Sample Collector: Doug Wafer
 Analyzed By: Jerry Knight

Compound	ppbv	ug/m ³	% STND
Acetylene	0.45	0.49	
Ethylene	0.70	0.82	
Ethane	6.15	7.71	
Propylene	0.31	0.54	
Propane	2.75	5.05	
Isobutane	1.32	3.20	
1-Butene	0.09	0.21	
n-Butane	2.03	4.92	
t-2-Butene	0.06	0.14	
c-2-Butene	0.05	0.12	
2-methylbutane	0.93	2.80	
1-Pentene	0.08	0.23	
n-Pentane	0.54	1.62	
Isoprene	0.04	0.11	
t-2-pentene	0.07	0.20	
c-2-pentene	0.05	0.15	
2,2-Dimethylbutane	0.06	0.22	
Cyclopentane	0.05	0.15	
2,3-dimethylbutane	0.15	0.54	
2-methylpentane	1.04	3.73	
3-Methylpentane	1.53	5.49	
1-hexene	0.04	0.14	
n-hexane	3.96	14.22	
Methylcyclopentane	0.73	2.56	
2,4-dimethylpentane	0.19	0.79	
Benzene	0.25	0.81	6.78
Cyclohexane	0.10	0.35	
2-methylhexane	0.11	0.46	
2,3-dimethylpentane	0.04	0.17	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	0.15	0.63	
2,2,4-trimethylpentane	0.11	0.52	
n-Heptane	0.15	0.63	
Methylcyclohexane	0.13	0.53	
2,3,4-trimethylpentane	0.03	0.14	
Toluene	0.47	1.80	0.02
2-methylheptane	0.08	0.38	
3-methylheptane	0.08	0.38	
n-Octane	0.18	0.86	
Ethylbenzene	0.10	0.44	0.00
m/p-Xylene	0.37	1.64	0.02
Styrene	0.07	0.30	0.01
o-Xylene	0.13	0.58	0.01
n-Nonane	0.14	0.75	
Cumene	0.02	0.10	0.00
n-Propylbenzene	0.03	0.15	
m-Ethyltoluene	0.11	0.55	
p-Ethyltoluene	0.07	0.35	
1,3,5-Trimethylbenzene	0.09	0.45	
o-Ethyltoluene	0.08	0.40	
1,2,4-trimethylbenzene	0.18	0.90	
n-Decane	0.11	0.65	
1,2,3-trimethylbenzene	0.03	0.15	
m-Diethylbenzene	0.02	0.11	
p-Diethylbenzene	0.02	0.11	
n-Undecane	0.08	0.52	
1,3-butadiene	0.03	0.07	7.35
Uncalibrated (as propane ppbc)	28.93	53.16	
Total NMOC (ppbc)	150.00	275.63	

Notes: Cloudy w/ winds from the south @ 4mph
 Ambient Temperature: 70° F
 Barometric Pressure: 29.87 inHG
 Mild chemical odor

Relative Humidity: 90%

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AM02671
 Field Sample ID: S1490
 Sample Date: 2/10/2009
 Sample Time: 7:52 CST
 Analysis Method: GC/MS

Sample Location: Destrahan High School
 1 Wildcat Lane
 Destrahan, LA 70047
 Sample Collector: Doug Wafer
 Analyzed By: Hsingfong "David" Liu

Compound	ppbv	ug/m ³	% STND
Freon-12	0.50	2.52	
Chloromethane	0.66	1.39	2.50
Freon-114	0.02	0.14	
Vinyl Chloride	nd	nd	
1,3-Butadiene	0.03	0.07	7.35
Bromomethane	nd	nd	
Carbon Disulfide	0.05	0.16	0.22
Chloroethane	nd	nd	
Freon-11	0.23	1.32	
Acetonitrile	0.15	0.26	0.03
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.07	0.25	
Freon-113	0.09	0.70	
Acetone	2.28	5.52	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	nd	nd	
Chloroform	0.02	0.10	2.31
1,2-Dichloroethane	nd	nd	
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.02	0.11	6.54
Benzene	0.23	0.75	6.24
Carbon Tetrachloride	0.09	0.58	8.65
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	nd	nd	
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	nd	nd	
Methacrylonitrile	0.19	0.53	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.38	1.46	0.02
2-Butanone	0.23	0.69	
1,2-Dibromoethane	nd	nd	
Tetrachloroethylene	nd	nd	
Methyl Acrylate	nd	nd	
Chlorobenzene	0.01	0.05	0.00
Ethylbenzene	0.07	0.31	0.00
m/p-Xylene	0.31	1.37	0.01
Styrene	0.01	0.04	0.00
o-Xylene	0.09	0.40	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	
1,3,5-Trimethylbenzene	0.05	0.25	
1,2,4-Trimethylbenzene	0.15	0.75	
Chlorobutane	nd	nd	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	nd	nd	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	nd	nd	
1,3-Dichlorobenzene	nd	nd	
1,2-Dichlorobenzene	nd	nd	
1,2,4-Trichlorobenzene	nd	nd	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	nd	nd	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

Notes:

Cloudy w/ winds from the south @ 4mph
 Ambient Temperature: 70° F Relative Humidity: 90%
 Barometric Pressure: 29.87 inHG
 Mild chemical odor

Appendix B

B-1 S.P. Arnett Middle

B-2 Western Heights Elementary

B-3 Vincent Settlement Elementary

Appendix B-1

S. P. Arnett Middle

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AM02407
 Canister ID S1436
 Sample Date: 2/3/2009
 Sample Time: 13:45 CST
 Analysis Method: GC/FID

Sample Location: S. P. Arnett Middle School
 400 Sulphur Ave.
 Westlake, LA 70669

Sample Collector: Julie White
 Analyzed By: Michelle McCarthy

Compound	ppbv	ug/m ³	% STND
Acetylene	0.56	0.61	
Ethylene	2.30	2.69	
Ethane	9.01	11.29	
Propylene	0.99	1.74	
Propane	6.72	12.35	
Isobutane	2.41	5.84	
1-Butene	0.09	0.21	
n-Butane	3.57	8.65	
t-2-Butene	0.06	0.14	
c-2-Butene	0.05	0.12	
2-methylbutane	1.46	4.39	
1-Pentene	0.04	0.12	
n-Pentane	0.89	2.68	
Isoprene	nd	nd	
t-2-pentene	0.05	0.15	
c-2-pentene	0.03	0.09	
2,2-Dimethylbutane	0.07	0.25	
Cyclopentane	0.06	0.18	
2,3-dimethylbutane	0.08	0.29	
2-methylpentane	0.35	1.26	
3-Methylpentane	0.29	1.04	
1-hexene	nd	nd	
n-hexane	0.84	3.02	
Methylcyclopentane	0.34	1.19	
2,4-dimethylpentane	nd	nd	
Benzene	0.24	0.78	6.51
Cyclohexane	0.27	0.95	
2-methylhexane	0.06	0.25	
2,3-dimethylpentane	nd	nd	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	0.09	0.38	
2,2,4-trimethylpentane	0.05	0.24	
n-Heptane	0.09	0.38	
Methylcyclohexane	0.10	0.41	
2,3,4-trimethylpentane	nd	nd	
Toluene	0.26	1.00	0.01
2-methylheptane	nd	nd	
3-methylheptane	nd	nd	
n-Octane	0.04	0.19	
Ethylbenzene	0.02	0.09	0.00
m/p-Xylene	0.06	0.27	0.00
Styrene	nd	nd	
o-Xylene	0.03	0.13	0.00
n-Nonane	nd	nd	
Cumene	nd	nd	
n-Propylbenzene	nd	nd	
m-Ethyltoluene	nd	nd	
p-Ethyltoluene	nd	nd	
1,3,5-Trimethylbenzene	nd	nd	
o-Ethyltoluene	nd	nd	
1,2,4-trimethylbenzene	nd	nd	
n-Decane	nd	nd	
1,2,3-trimethylbenzene	nd	nd	
m-Diethylbenzene	nd	nd	
p-Diethylbenzene	nd	nd	
n-Undecane	nd	nd	
1,3-butadiene	nd	nd	
Uncalibrated (as propane ppbc)	8.08	14.85	
Total NMOC (ppbc)	113.00	207.64	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AM02407
 Field Sample ID: S1436
 Sample Date: 2/3/2009
 Sample Time: 13:45 CST
 Analysis Method: GC/MS

Sample Location: S. P. Arnett Middle School
 400 Sulphur Ave.
 Westlake, LA 70669
 Sample Collector: Julie White
 Analyzed By: Michelle McCarthy

Compound	ppbv	ug/m ³	% STND
Freon-12	0.85	4.28	
Chloromethane	0.86	1.81	3.26
Freon-114	0.24	1.71	
Vinyl Chloride	0.23	0.60	50.33
1,3-Butadiene	0.24	0.54	58.79
Bromomethane	0.23	0.91	
Carbon Disulfide	0.18	0.57	0.80
Chloroethane	0.22	0.59	0.01
Freon-11	0.52	2.98	
Acetonitrile	0.29	0.50	0.06
1,1-Dichloroethene	0.18	0.73	
Methylene Chloride	0.31	1.10	
Freon-113	0.30	2.34	
Acetone	2.89	6.99	
1,1-Dichloroethane	0.20	0.82	
cis-1,2-Dichloroethane	0.18	0.73	18.89
Acrylonitrile	0.26	0.57	39.10
Chloroform	0.24	1.19	27.76
1,2-Dichloroethane	0.50	2.06	53.55
Diethyl Ether	0.15	0.46	
1,1,1-Trichloroethane	0.23	1.28	75.20
Benzene	0.47	1.53	12.75
Carbon Tetrachloride	0.27	1.73	25.94
Allyl Chloride	0.17	0.54	0.76
1,2-Dichloropropane	0.22	1.04	0.01
Trichloroethylene	0.23	1.26	2.14
cis-1,3-Dichloropropene	0.16	0.74	0.69
MTBE	0.14	0.51	
Tetrahydrofuran	0.14	0.42	
Methacrylonitrile	0.14	0.39	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	0.16	0.74	0.69
1,1,2-Trichloroethane	0.21	1.17	18.68
Toluene	0.49	1.88	0.02
2-Butanone	0.46	1.38	
1,2-Dibromoethane	0.19	1.49	330.49
Tetrachloroethylene	0.22	1.52	1.48
Methyl Acrylate	0.14	0.50	
Chlorobenzene	0.20	0.94	0.09
Ethylbenzene	0.20	0.88	0.01
m/p-Xylene	0.24	1.06	0.01
Styrene	0.15	0.65	0.01
o-Xylene	0.21	0.93	0.01
2-Nitropropane	0.12	0.45	2.23
1,1,2,2-Tetrachloroethane	0.21	1.47	86.39
1,3,5-Trimethylbenzene	0.15	0.75	
1,2,4-Trimethylbenzene	0.16	0.80	
Chlorobutane	0.16	0.62	
Benzyl Chloride	0.11	0.58	
4-Methyl-2-Pentanone	0.10	0.42	
Chloroacetonitrile	0.15	0.47	
1,4-Dichlorobenzene	0.15	0.92	0.06
1,3-Dichlorobenzene	0.16	0.98	
1,2-Dichlorobenzene	0.16	0.98	
1,2,4-Trichlorobenzene	0.10	0.76	
1,3-Hexachlorobutadiene	0.18	1.96	42.98
2-Hexanone	nd	nd	
Methyl Methacrylate	0.13	0.54	0.01
Ethyl Methacrylate	0.09	0.43	
Nitrobenzene	nd	nd	

Appendix B-2

Western Heights Elementary

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AM02408
 Field Sample ID: G1134
 Sample Date: 2/3/2009
 Sample Time: 14:01 CST
 Analysis Method: GC/MS

Sample Location: Western Hights Elem. School
 1100 Elizabeth St.
 Westlake, LA 70669
 Sample Collector: Julie White
 Analyzed By: Michelle McCarthy

Compound	ppbv	ug/m ³	% STND
Freon-12	0.69	3.48	
Chloromethane	0.73	1.54	2.76
Freon-114	0.04	0.28	
Vinyl Chloride	nd	nd	
1,3-Butadiene	0.10	0.23	24.50
Bromomethane	0.04	0.16	
Carbon Disulfide	0.03	0.10	0.13
Chloroethane	nd	nd	
Freon-11	0.32	1.83	
Acetonitrile	0.12	0.21	0.03
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.12	0.42	
Freon-113	0.12	0.94	
Acetone	4.07	9.85	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	nd	nd	
Chloroform	0.04	0.20	4.63
1,2-Dichloroethane	0.08	0.33	8.57
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.04	0.22	13.08
Benzene	0.60	1.95	16.27
Carbon Tetrachloride	0.11	0.71	10.57
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	0.03	0.16	0.28
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	0.08	0.24	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.26	1.00	0.01
2-Butanone	0.64	1.92	
1,2-Dibromoethane	0.02	0.16	34.79
Tetrachloroethylene	0.03	0.21	0.20
Methyl Acrylate	nd	nd	
Chlorobenzene	0.02	0.09	0.01
Ethylbenzene	0.04	0.18	0.00
m/p-Xylene	0.08	0.35	0.00
Styrene	0.02	0.09	0.00
o-Xylene	0.05	0.22	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	0.02	0.14	8.23
1,3,5-Trimethylbenzene	0.02	0.10	
1,2,4-Trimethylbenzene	0.03	0.15	
Chlorobutane	0.02	0.08	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	0.10	0.42	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	0.04	0.25	0.02
1,3-Dichlorobenzene	0.04	0.25	
1,2-Dichlorobenzene	0.02	0.12	
1,2,4-Trichlorobenzene	0.04	0.30	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	0.15	0.63	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AM02408
 Field Sample ID: G1134
 Sample Date: 2/3/2009
 Sample Time: 14:01 CST
 Analysis Method: GC/MS

Sample Location: Western Hights Elem. School
 1100 Elizabeth St.
 Westlake, LA 70669
 Sample Collector: Julie White
 Analyzed By: Michelle McCarthy

Compound	ppbv	ug/m ³	% STND
Freon-12	0.69	3.48	
Chloromethane	0.73	1.54	2.76
Freon-114	0.04	0.28	
Vinyl Chloride	nd	nd	
1,3-Butadiene	0.10	0.23	24.50
Bromomethane	0.04	0.16	
Carbon Disulfide	0.03	0.10	0.13
Chloroethane	nd	nd	
Freon-11	0.32	1.83	
Acetonitrile	0.12	0.21	0.03
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.12	0.42	
Freon-113	0.12	0.94	
Acetone	4.07	9.85	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	nd	nd	
Chloroform	0.04	0.20	4.63
1,2-Dichloroethane	0.08	0.33	8.57
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.04	0.22	13.08
Benzene	0.60	1.95	16.27
Carbon Tetrachloride	0.11	0.71	10.57
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	0.03	0.16	0.28
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	0.08	0.24	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.26	1.00	0.01
2-Butanone	0.64	1.92	
1,2-Dibromoethane	0.02	0.16	34.79
Tetrachloroethylene	0.03	0.21	0.20
Methyl Acrylate	nd	nd	
Chlorobenzene	0.02	0.09	0.01
Ethylbenzene	0.04	0.18	0.00
m/p-Xylene	0.08	0.35	0.00
Styrene	0.02	0.09	0.00
o-Xylene	0.05	0.22	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	0.02	0.14	8.23
1,3,5-Trimethylbenzene	0.02	0.10	
1,2,4-Trimethylbenzene	0.03	0.15	5.04
Chlorobutane	0.02	0.08	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	0.10	0.42	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	0.04	0.25	0.02
1,3-Dichlorobenzene	0.04	0.25	
1,2-Dichlorobenzene	0.02	0.12	
1,2,4-Trichlorobenzene	0.04	0.30	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	0.15	0.63	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

Appendix B-3

Vincent Settlement Elementary

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AM02402
 Canister ID G1083
 Sample Date: 2/4/2009
 Sample Time: 9:03 CST
 Analysis Method: GC/FID

Sample Location: Vincent Settlement Elem. School
 1072 Vincent Settlement Rd.
 Sulphur, LA 70665

Sample Collector: Julie White
 Analyzed By: Michelle McCarthy

Compound	ppbv	ug/m ³	% STND
Acetylene	1.82	1.97	
Ethylene	0.61	0.71	
Ethane	4.10	5.14	
Propylene	0.12	0.21	
Propane	3.21	5.90	
Isobutane	0.83	2.01	
1-Butene	0.04	0.09	
n-Butane	1.48	3.58	
t-2-Butene	nd	nd	
c-2-Butene	nd	nd	
2-methylbutane	0.63	1.89	
1-Pentene	nd	nd	
n-Pentane	0.63	1.89	
Isoprene	nd	nd	
t-2-pentene	nd	nd	
c-2-pentene	nd	nd	
2,2-Dimethylbutane	0.04	0.14	
Cyclopentane	0.06	0.18	
2,3-dimethylbutane	0.05	0.18	
2-methylpentane	0.21	0.75	
3-Methylpentane	0.13	0.47	
1-hexene	nd	nd	
n-hexane	0.28	1.01	
Methylcyclopentane	0.14	0.49	
2,4-dimethylpentane	nd	nd	
Benzene	0.14	0.46	3.80
Cyclohexane	0.09	0.32	
2-methylhexane	0.05	0.21	
2,3-dimethylpentane	nd	nd	

Compound	ppbv	ug/m ³	% STND
3-methylhexane	0.08	0.33	
2,2,4-trimethylpentane	0.04	0.19	
n-Heptane	0.11	0.46	
Methylcyclohexane	0.08	0.33	
2,3,4-trimethylpentane	nd	nd	
Toluene	0.10	0.38	0.00
2-methylheptane	0.02	0.10	
3-methylheptane	nd	nd	
n-Octane	0.04	0.19	
Ethylbenzene	nd	nd	
m/p-Xylene	nd	nd	
Styrene	nd	nd	
o-Xylene	nd	nd	
n-Nonane	nd	nd	
Cumene	nd	nd	
n-Propylbenzene	nd	nd	
m-Ethyltoluene	nd	nd	
p-Ethyltoluene	nd	nd	
1,3,5-Trimethylbenzene	nd	nd	
o-Ethyltoluene	nd	nd	
1,2,4-trimethylbenzene	nd	nd	
n-Decane	nd	nd	
1,2,3-trimethylbenzene	nd	nd	
m-Diethylbenzene	nd	nd	
p-Diethylbenzene	nd	nd	
n-Undecane	0.04	0.26	
1,3-butadiene	nd	nd	
Uncalibrated (as propane ppbc)	4.29	7.88	
Total NMOC (ppbc)	54.00	99.23	

Louisiana Department of Environmental Quality

Air Toxics Laboratory

Lab Sample ID: AM02402
 Field Sample ID: G1083
 Sample Date: 2/4/2009
 Sample Time: 9:03 CST
 Analysis Method: GC/MS

Sample Location: Vincent Settlement Elem. School
 1072 Vincent Settlement Rd.
 Sulphur, LA 70665
 Sample Collector: Julie White
 Analyzed By: Michelle McCarthy

Compound	ppbv	ug/m ³	% STND
Freon-12	0.69	3.48	
Chloromethane	0.70	1.47	2.65
Freon-114	0.05	0.36	
Vinyl Chloride	nd	nd	
1,3-Butadiene	nd	nd	
Bromomethane	0.04	0.16	
Carbon Disulfide	0.04	0.13	0.18
Chloroethane	nd	nd	
Freon-11	0.31	1.77	
Acetonitrile	0.10	0.17	0.02
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.11	0.39	
Freon-113	0.12	0.94	
Acetone	1.36	3.29	
1,1-Dichloroethane	nd	nd	
cis-1,2-Dichloroethane	nd	nd	
Acrylonitrile	nd	nd	
Chloroform	0.03	0.15	3.47
1,2-Dichloroethane	nd	nd	
Diethyl Ether	nd	nd	
1,1,1-Trichloroethane	0.03	0.17	9.81
Benzene	0.21	0.68	5.70
Carbon Tetrachloride	0.11	0.71	10.57
Allyl Chloride	nd	nd	
1,2-Dichloropropane	nd	nd	
Trichloroethylene	0.02	0.11	0.19
cis-1,3-Dichloropropene	nd	nd	
MTBE	nd	nd	
Tetrahydrofuran	nd	nd	
Methacrylonitrile	nd	nd	

Compound	ppbv	ug/m ³	% STND
trans-1,3-Dichloropropene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Toluene	0.13	0.50	0.01
2-Butanone	0.18	0.54	
1,2-Dibromoethane	0.02	0.16	34.79
Tetrachloroethylene	0.02	0.14	0.13
Methyl Acrylate	nd	nd	
Chlorobenzene	0.02	0.09	0.01
Ethylbenzene	0.03	0.13	0.00
m/p-Xylene	0.05	0.22	0.00
Styrene	nd	nd	
o-Xylene	0.03	0.13	0.00
2-Nitropropane	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	
1,3,5-Trimethylbenzene	0.02	0.10	
1,2,4-Trimethylbenzene	0.03	0.15	
Chlorobutane	nd	nd	
Benzyl Chloride	nd	nd	
4-Methyl-2-Pentanone	nd	nd	
Chloroacetonitrile	nd	nd	
1,4-Dichlorobenzene	nd	nd	
1,3-Dichlorobenzene	nd	nd	
1,2-Dichlorobenzene	nd	nd	
1,2,4-Trichlorobenzene	0.02	0.15	
1,3-Hexachlorobutadiene	nd	nd	
2-Hexanone	0.03	0.13	
Methyl Methacrylate	nd	nd	
Ethyl Methacrylate	nd	nd	
Nitrobenzene	nd	nd	

Appendix C

Istrouma High MAML Results

Compound	"02" PPBV	"03" PPBV	"04" PPBV	"05" PPBV	"06" PPBV	AVG PPBV	MIN PPBV	MAX PPBV	Median PPBV
Vinyl Chloride	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
1,1-Dichloroethene	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Allyl Chloride	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Benzene	5.85	1.53	0.89	0.62	0.74	1.93	0.62	5.85	0.89
Trichloroethylene	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Toluene	1.66	1.48	1.19	1.04	1.35	1.34	1.04	1.66	1.35
Tetrachloroethylene	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Chlorobenzene	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Ethylbenzene	0.30	0.24	0.19	0.18	0.25	0.23	0.18	0.30	0.24
m/p-Xylene	0.90	0.76	0.63	0.55	0.88	0.74	0.55	0.90	0.76
o-Xylene	0.52	0.68	0.57	0.50	0.85	0.62	0.50	0.85	0.57
Styrene	0.47	0.28	0.22	0.23	0.35	0.31	0.22	0.47	0.28
Isopropylbenzene	0.08	0.06	0.02	0.03	0.09	0.06	0.02	0.09	0.06
1,3,5-Trimethylbenzene	0.22	0.20	0.21	0.17	0.21	0.20	0.17	0.22	0.21
1,2,4-Trimethylbenzene	0.48	0.48	0.40	0.36	0.46	0.44	0.36	0.48	0.46

Freon-12	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Chloromethane	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Vinyl Chloride	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Chloroethane	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
1,1-Dichloroethene	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Methylene Chloride	0.58	nd	nd	nd	nd	0.12	0.00	0.58	0.58
Allyl Chloride	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
1,1-Dichloroethane	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Chloroform	0.10	nd	nd	nd	nd	0.02	0.00	0.10	0.10
Ethylene Dichloride	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
1,1,1-Trichloroethane	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Carbon Tetrachloride	0.06	0.08	0.07	0.06	nd	0.05	0.00	0.08	0.07
Trichloroethylene	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
1,1,2-Trichloroethane	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Tetrachloroethylene	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
Chlorobenzene	nd	nd	nd	nd	nd	nd	0.00	0.00	nd
1,1,2,2-Tetrachloroethane	nd	nd	nd	nd	nd	nd	0.00	0.00	nd

Louisiana Department of Environmental Quality

Mobile Air Monitoring Laboratory

Sample ID: ISTROUMA_AVG
 Sample Date: 1/7/2009
 Sample Time: 11:00-14:45 CST
 Analysis Method: GC/PID/ELCD
 Operator: Bob Bailey

Sample Location: Istrouma High School
 3730 Winbourne Ave.
 Baton Rouge, LA 70805

Compound	PPBV	$\mu\text{g}/\text{m}^3$	% STND
Vinyl Chloride	nd	nd	
1,1-Dichloroethene	nd	nd	
Allyl Chloride	nd	nd	
Benzene	1.93	6.28	52.34
Trichloroethylene	nd	nd	
Toluene	1.34	5.14	0.06
Tetrachloroethylene	nd	nd	
Chlorobenzene	nd	nd	
Ethylbenzene	0.23	1.02	0.01
m/p-Xylene	0.74	3.27	0.03
o-Xylene	0.62	2.74	0.03
Styrene	0.31	1.35	0.03
Isopropylbenzene	0.06	0.30	0.01
1,3,5-Trimethylbenzene	0.20	1.00	
1,2,4-Trimethylbenzene	0.44	2.20	

Freon-12	nd	nd	
Chloromethane	nd	nd	
Vinyl Chloride	nd	nd	
Chloroethane	nd	nd	
1,1-Dichloroethene	nd	nd	
Methylene Chloride	0.12	0.42	
Allyl Chloride	nd	nd	
1,1-Dichloroethane	nd	nd	
Chloroform	0.02	0.10	2.31
Ethylene Dichloride	nd	nd	
1,1,1-Trichloroethane	nd	nd	
Carbon Tetrachloride	0.05	0.32	4.80
Trichloroethylene	nd	nd	
1,1,2-Trichloroethane	nd	nd	
Tetrachloroethylene	nd	nd	
Chlorobenzene	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	

Appendix D

Soil and Groundwater Data

Citgo AI 1250
Nickel Results in Soil Samples

					Chemical Name: Cas RN: Result units	NICKEL 7440-02-0 mg/kg
Location	SYS_SAMPLE_CODE	Fraction	Sample Date	Analytical Method		
PB1	20030220-PB1-2'-4'	T	02/20/2003	6010B	5.9	
PB1	20030220-PB1-36'-38'	T	02/20/2003	6010B	7.6	
PB1	20030220-PB1-54'-56'	T	02/20/2003	6010B	16.6	
PB2	20030227-PB2-14'-16'	T	02/27/2003	6010B	4.2	
PB2	20030228-PB2-26'-28'	T	02/28/2003	6010B	3.7	
PB2	20030228-PB2-58'-60'	T	02/28/2003	6010B	1.4	
PB3	20030219-PB3-26'-28'	T	02/19/2003	6010B	1.9	
PB3	20030219-PB3-4'-6'	T	02/19/2003	6010B	6.9	
PB3	20030219-PB3-58'-60'	T	02/19/2003	6010B	2.2	
PB4	20030218-PB4-14'-16'	T	02/18/2003	6010B	6.7	
PB4	20030218-PB4-32'-34'	T	02/18/2003	6010B	2.7	
PB4	20030218-PB4-60'-62'	T	02/18/2003	6010B	3.5	
PB4	20030218-PB4-D	T	02/18/2003	6010B	4.4	
PB5	20030224-PB5-40'-42'	T	02/24/2003	6010B	1.9	
PB5	20030224-PB5-60'-62'	T	02/24/2003	6010B	4.7	
PB5	20030224-PB5-6'-8'	T	02/24/2003	6010B	6.7	
PB6	20030226-PB6-8'-10'	T	02/26/2003	6010B	10.7	
PB6	20030227-PB6-38'-40'	T	02/27/2003	6010B	5	
PB6	20030227-PB6-60'-62'	T	02/27/2003	6010B	5.5	

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Intracoastal Waterway northwest of Hackberry, Louisiana	29-Oct-08	NICKEL	1.38	UG/L
Bayou Choupique south of Sulphur, Louisiana	29-Oct-08	NICKEL	1.45	UG/L
Lake Charles at the City of Lake Charles, Louisiana	22-Oct-08	NICKEL	1.52	UG/L
Bayou Verdine west of Westlake, Louisiana	22-Oct-08	NICKEL	2.89	UG/L
Bayou D'Inde south of Sulphur, Louisiana	22-Oct-08	NICKEL	3.04	UG/L
Bayou Serpent southeast of Hecker, Louisiana	14-Oct-08	NICKEL	0.84	UG/L
English Bayou north of Chloe', Louisiana	08-Oct-08	NICKEL	1.15	UG/L
Bear Head Creek northeast of Starks, Louisiana	08-Oct-08	NICKEL	2.97	UG/L
Calcasieu River near Burton Landing, Louisiana	07-Oct-08	NICKEL	1.79	UG/L
Calcasieu River at Moss Bluff, Louisiana	07-Oct-08	NICKEL	1.43	UG/L
Calcasieu River near Burton Landing, Louisiana	30-Jul-08	NICKEL	1.37	UG/L
Contraband Bayou at Lake Charles, Louisiana	30-Jul-08	NICKEL	1.4	UG/L
Prien Lake southwest of the City of Lake Charles, Louisiana	30-Jul-08	NICKEL	1.38	UG/L
Calcasieu River (West Fork) near Lake Charles, Louisiana	16-Jul-08	NICKEL	1.06	UG/L
Calcasieu River at Moss Bluff, Louisiana	16-Jul-08	NICKEL	0.8	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Little River east of Buhler, Louisiana	16-Jul-08	NICKEL	1.52	UG/L
Indian Bayou at Moss Bluff, Louisiana	16-Jul-08	NICKEL	1.48	UG/L
Houston River northeast of Sulphur, Louisiana	16-Jul-08	NICKEL	1.42	UG/L
Contraband Bayou at Lake Charles, Louisiana	08-Apr-08	NICKEL	1.21	UG/L
Prien Lake southwest of the City of Lake Charles, Louisiana	08-Apr-08	NICKEL	1.15	UG/L
Calcasieu River (West Fork) near Lake Charles, Louisiana	07-Apr-08	NICKEL	2.33	UG/L
Calcasieu River at Moss Bluff, Louisiana	07-Apr-08	NICKEL	2.28	UG/L
Little River east of Buhler, Louisiana	07-Apr-08	NICKEL	2.93	UG/L
Indian Bayou at Moss Bluff, Louisiana	07-Apr-08	NICKEL	2.44	UG/L
Houston River northeast of Sulphur, Louisiana	07-Apr-08	NICKEL	2.4	UG/L
Calcasieu River (West Fork) near Lake Charles, Louisiana	23-Jan-08	NICKEL	1.91	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Calcasieu River at Moss Bluff, Louisiana	23-Jan-08	NICKEL	1.75	UG/L
Little River east of Buhler, Louisiana	23-Jan-08	NICKEL	2.05	UG/L
Indian Bayou at Moss Bluff, Louisiana	23-Jan-08	NICKEL	1.86	UG/L
Houston River northeast of Sulphur, Louisiana	23-Jan-08	NICKEL	1.91	UG/L
Calcasieu River near Burton Landing, Louisiana	22-Jan-08	NICKEL	1.04	UG/L
Contraband Bayou at Lake Charles, Louisiana	22-Jan-08	NICKEL	1.02	UG/L
Prien Lake southwest of the City of Lake Charles, Louisiana	22-Jan-08	NICKEL	1.01	UG/L
Calcasieu River near Burton Landing, Louisiana	24-Oct-07	NICKEL	1.53	UG/L
Contraband Bayou at Lake Charles, Louisiana	24-Oct-07	NICKEL	1.42	UG/L
Prien Lake southwest of the City of Lake Charles, Louisiana	24-Oct-07	NICKEL	1.4	UG/L
Calcasieu River (West Fork) near Lake Charles, Louisiana	16-Oct-07	NICKEL	1.6	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Calcasieu River at Moss Bluff, Louisiana	16-Oct-07	NICKEL	1.19	UG/L
Little River east of Buhler, Louisiana	16-Oct-07	NICKEL	2.76	UG/L
Indian Bayou at Moss Bluff, Louisiana	16-Oct-07	NICKEL	2.38	UG/L
Houston River northeast of Sulphur, Louisiana	16-Oct-07	NICKEL	2.5	UG/L
Calcasieu River near Burton Landing, Louisiana	07-Aug-07	NICKEL	1.38	UG/L
Calcasieu River at Moss Bluff, Louisiana	07-Aug-07	NICKEL	1.5	UG/L
Calcasieu River near Burton Landing, Louisiana	29-May-07	NICKEL	1.59	UG/L
Calcasieu River at Moss Bluff, Louisiana	29-May-07	NICKEL	1.33	UG/L
Calcasieu River near Burton Landing, Louisiana	27-Mar-07	NICKEL	1.72	UG/L
Calcasieu River at Moss Bluff, Louisiana	27-Mar-07	NICKEL	1.96	UG/L
Calcasieu River near Burton Landing, Louisiana	09-Jan-07	NICKEL	2.61	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Calcasieu River at Moss Bluff, Louisiana	09-Jan-07	NICKEL	1.71	UG/L
Calcasieu River near Burton Landing, Louisiana	12-Dec-06	NICKEL	1.72	UG/L
Calcasieu River at Moss Bluff, Louisiana	12-Dec-06	NICKEL	2.25	UG/L
Sabine River northeast of Orange, Texas	28-Nov-06	NICKEL	1.5	UG/L
Sabine River northwest of Toomey, Louisiana	28-Nov-06	NICKEL	1.87	UG/L
Vinton Waterway south of Vinton, Louisiana	28-Nov-06	NICKEL	1.32	UG/L
Black Bayou south of Toomey, Louisiana	28-Nov-06	NICKEL	1.9	UG/L
Vinton Waterway south of Vinton, Louisiana	21-Aug-06	NICKEL	1.07	UG/L
Black Bayou south of Toomey, Louisiana	21-Aug-06	NICKEL	1.14	UG/L
Calcasieu River near Burton Landing, Louisiana	15-Aug-06	NICKEL	1.4	UG/L
Calcasieu River at Moss Bluff, Louisiana	15-Aug-06	NICKEL	1.51	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Calcasieu River near Burton Landing, Louisiana	19-Jun-06	NICKEL	1.74	UG/L
Calcasieu River at Moss Bluff, Louisiana	19-Jun-06	NICKEL	1.02	UG/L
Sabine River northeast of Orange, Texas	22-May-06	NICKEL	1.24	UG/L
Sabine River northwest of Toomey, Louisiana	22-May-06	NICKEL	1.2	UG/L
Vinton Waterway south of Vinton, Louisiana	22-May-06	NICKEL	1.15	UG/L
Black Bayou south of Toomey, Louisiana	22-May-06	NICKEL	1.17	UG/L
Calcasieu River near Burton Landing, Louisiana	07-Mar-06	NICKEL	1.52	UG/L
Calcasieu River at Moss Bluff, Louisiana	07-Mar-06	NICKEL	1.5	UG/L
Sabine River northeast of Orange, Texas	06-Mar-06	NICKEL	1.23	UG/L
Sabine River northwest of Toomey, Louisiana	06-Mar-06	NICKEL	0.79	UG/L
Vinton Waterway south of Vinton, Louisiana	06-Mar-06	NICKEL	1.11	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Black Bayou south of Toomey, Louisiana	06-Mar-06	NICKEL	0.98	UG/L
Calcasieu River (West Fork) near Lake Charles, Louisiana	01-Nov-05	NICKEL	2.31	UG/L
Calcasieu River at Moss Bluff, Louisiana	01-Nov-05	NICKEL	1.26	UG/L
Lake Charles at the City of Lake Charles, Louisiana	01-Nov-05	NICKEL	1.48	UG/L
Bayou Verdine west of Westlake, Louisiana	01-Nov-05	NICKEL	4.57	UG/L
Houston River northeast of Sulphur, Louisiana	01-Nov-05	NICKEL	2.51	UG/L
Bayou D'Inde south of Sulphur, Louisiana	01-Nov-05	NICKEL	3.41	UG/L
Calcasieu River near Burton Landing, Louisiana	31-Oct-05	NICKEL	1.86	UG/L
Prien Lake southwest of the City of Lake Charles, Louisiana	31-Oct-05	NICKEL	1.61	UG/L
Bayou Choupique south of Sulphur, Louisiana	31-Oct-05	NICKEL	1.41	UG/L
Calcasieu River (West Fork) near Lake Charles, Louisiana	18-Oct-05	NICKEL	2.31	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Calcasieu River at Moss Bluff, Louisiana	18-Oct-05	NICKEL	1.7	UG/L
Lake Charles at the City of Lake Charles, Louisiana	18-Oct-05	NICKEL	1.46	UG/L
Bayou Verdine west of Westlake, Louisiana	18-Oct-05	NICKEL	1.86	UG/L
Houston River northeast of Sulphur, Louisiana	18-Oct-05	NICKEL	4.48	UG/L
Bayou D'Inde south of Sulphur, Louisiana	18-Oct-05	NICKEL	2.12	UG/L
Calcasieu River near Burton Landing, Louisiana	17-Oct-05	NICKEL	1.66	UG/L
Prien Lake southwest of the City of Lake Charles, Louisiana	17-Oct-05	NICKEL	1.47	UG/L
Bayou Choupique south of Sulphur, Louisiana	17-Oct-05	NICKEL	1.6	UG/L
Bayou Serpent southeast of Hecker, Louisiana	20-Sep-05	NICKEL	0.7	UG/L
Lake Charles at the City of Lake Charles, Louisiana	19-Sep-05	NICKEL	1.1	UG/L
Bayou Verdine west of Westlake, Louisiana	19-Sep-05	NICKEL	3.8	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Bayou D'Inde south of Sulphur, Louisiana	19-Sep-05	NICKEL	3.4	UG/L
Intracoastal Waterway northwest of Hackberry, Louisiana	14-Sep-05	NICKEL	1.3	UG/L
Bayou Choupique south of Sulphur, Louisiana	14-Sep-05	NICKEL	1.2	UG/L
English Bayou north of Chloe', Louisiana	13-Sep-05	NICKEL	1	UG/L
Bear Head Creek northeast of Starks, Louisiana	13-Sep-05	NICKEL	1.4	UG/L
Calcasieu River near Burton Landing, Louisiana	12-Sep-05	NICKEL	1.5	UG/L
Calcasieu River at Moss Bluff, Louisiana	12-Sep-05	NICKEL	0.9	UG/L
Bayou Serpent southeast of Hecker, Louisiana	13-Jul-05	NICKEL	0.84	UG/L
Bayou Serpent southeast of Hecker, Louisiana	12-Jul-05	NICKEL	1.63	UG/L
Bayou Verdine west of Westlake, Louisiana	12-Jul-05	NICKEL	1.74	UG/L
Lake Charles at the City of Lake Charles, Louisiana	12-Jul-05	NICKEL	0.95	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
English Bayou north of Chloe', Louisiana	29-Jun-05	NICKEL	0.87	UG/L
Bear Head Creek northeast of Starks, Louisiana	29-Jun-05	NICKEL	1.49	UG/L
Bayou Choupique south of Sulphur, Louisiana	28-Jun-05	NICKEL	1.11	UG/L
Intracoastal Waterway northwest of Hackberry, Louisiana	28-Jun-05	NICKEL	1.37	UG/L
Bayou Serpent southeast of Hecker, Louisiana	03-May-05	NICKEL	1.19	UG/L
Bayou D'Inde south of Sulphur, Louisiana	02-May-05	NICKEL	2.21	UG/L
Bayou Verdine west of Westlake, Louisiana	02-May-05	NICKEL	2.39	UG/L
Lake Charles at the City of Lake Charles, Louisiana	02-May-05	NICKEL	0.84	UG/L
Calcasieu River near Burton Landing, Louisiana	02-May-05	NICKEL	0.96	UG/L
Calcasieu River at Moss Bluff, Louisiana	02-May-05	NICKEL	0.57	UG/L
English Bayou north of Chloe', Louisiana	26-Apr-05	NICKEL	1.02	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Bear Head Creek northeast of Starks, Louisiana	26-Apr-05	NICKEL	1.19	UG/L
Bayou Choupique south of Sulphur, Louisiana	25-Apr-05	NICKEL	1.1	UG/L
Intracoastal Waterway northwest of Hackberry, Louisiana	25-Apr-05	NICKEL	1.15	UG/L
Bayou Serpent southeast of Hecker, Louisiana	08-Mar-05	NICKEL	0.85	UG/L
Calcasieu River near Burton Landing, Louisiana	08-Mar-05	NICKEL	1	UG/L
Calcasieu River at Moss Bluff, Louisiana	08-Mar-05	NICKEL	0.88	UG/L
Bayou Verdine west of Westlake, Louisiana	07-Mar-05	NICKEL	0.41	UG/L
Lake Charles at the City of Lake Charles, Louisiana	07-Mar-05	NICKEL	0.94	UG/L
Bayou D'Inde south of Sulphur, Louisiana	07-Mar-05	NICKEL	1.18	UG/L
English Bayou north of Chloe', Louisiana	01-Mar-05	NICKEL	0.79	UG/L
Bear Head Creek northeast of Starks, Louisiana	01-Mar-05	NICKEL	1.42	UG/L

Calcasieu Parish Groundwater Nickel Results

SITE_NAME	COLLECTION_DATE	PARAMETER	RESULT	UNITS
Bayou Choupique south of Sulphur, Louisiana	28-Feb-05	NICKEL	1.18	UG/L
Intracoastal Waterway northwest of Hackberry, Louisiana	28-Feb-05	NICKEL	0.88	UG/L